AMENDMENTS TO THE CLAIMS

Please replace the claims, including all prior versions, with the listing of claims below.

LISTING OF CLAIMS:

1-4. (Canceled).

5. (Currently amended) A method of determining a [[portion of]] a head-media spacing modulation [[spectrum]] of a portion of an actual disc media surface, comprising:

simulating a head passing in near proximity to a simulated disc media surface to generate an air bearing transfer function [[for a spectral density]];

generating a topography function for the actual disc media surface; and

multiplying the topography function and the air bearing transfer function to provide the head-media spacing modulation [[spectrum]].

6. (Currently amended) The method of claim 5 further comprising summing the head-media spacing modulation [[spectrum]] to provide a head-media spacing waviness value for the disc media surface.

7. (Currently amended) The method of claim 5 wherein the generating of the [[power spectral density]] topography function comprises:

sampling topography of the portion of the actual disc media surface;

translating the actual disc topography sampled to wavelengths to provide [[an]] a sampled topography [[spectrum]]; and

averaging the sampled topography [[spectrum]] to provide the topography function.

8. (Original) The method of claim 5 wherein the simulating comprises:

providing a simulated disc topography having a wavelength;

selecting a head to model;

providing air bearing code for the head selected;

providing operation parameters;

determining an air bearing transfer function from the air bearing code;

determining simulated head-media spacing modulation for each of a plurality of disc wavelengths; and

interpolating the air bearing transfer function with gradations of the wavelengths to provide the air bearing transfer function for the spectral density.

9. (Original) The method of claim 5 further comprising:

providing a group of substrates;

determining head-media spacing for waviness for each substrate in the group of substrates; and

determining head-media spacing for roughness for each substrate in the group of substrates.

10. (Original) The method of claim 9 further comprising:

square-root summing the head-media spacing for roughness and the head-media spacing for waviness for each substrate in the group of substrates; and

correlating results from the square-root-summing.

11. (Currently amended) The method of claim 5 further comprising providing a model for glide avalanche (GA) to relate head-media spacing modulation with variables affecting processing of the actual disc media surface, the model comprising:

an equation where the GA equals

a $[\int \Lambda^2(\lambda) Y(\lambda) d\lambda]^{1/2} + b$,

where a and b are constants, Λ is an air bearing transfer function, Y is a topography function, and λ is wavelength.

12. (Original) The method of claim 11 wherein the model comprises integral boundaries from zero to one revolution of the disc media.

13. (Currently amended) The method of claim 5 further comprising providing a model for glide avalanche (GA) to relate head-media spacing modulation with variables affecting processing of the actual disc media surface, the model comprising:

an equation where the GA equals

$$a[\int Y(\lambda)d\lambda + \int \Lambda^2(\lambda)Y(\lambda)d\lambda]^{1/2} + b,$$

where a and b are constants, Λ is an air bearing transfer function, Y is a topography function, and λ is wavelength.

14. (Original) The method of claim 13 wherein the model comprises a constant c for breaking the equation into two integrals.

15. (Original) The method of claim 14 wherein the constant c is between high frequency region and resonant frequency region.

16. (Original) A method of determining head-media spacing (HMS) modulation model, comprising:

providing a simulated disc topography having a wavelength;

selecting a head to model;

providing air bearing code for the head selected;

providing disc drive operation parameters;

determining an air bearing transfer function from the air bearing code;

simulating the head passing over the disc topography with the air bearing code; and

determining simulated head-media spacing modulation for each of a plurality of disc wavelengths.

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)